

**In the United States Patent and Trademark Office
on Appeal from the Examiner to the Board
of Patent Appeals and Interferences**

In re Application of: James D. Linder
Serial No.: 10/034,491
Filing date: December 27, 2001
Group Art Unit: 2174
Confirmation No.: 1247
Title: COMPUTER AIDED DESIGN SYSTEM HAVING
BUSINESS PROCESS ATTRIBUTES

Mail Stop: Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Response to Notice of Noncompliant Appeal Brief

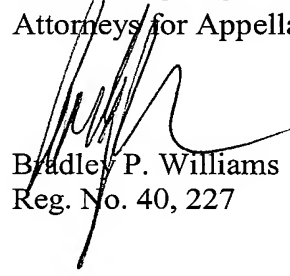
Appellant has appealed to the Board of Patent Appeals and Interferences from the decision of the Examiner mailed July 14, 2006, finally rejecting Claims 1-16, and 18-24, which are all pending in this case. On September 13, 2006, Appellant filed a Notice of Appeal. Appellant filed an Appeal Brief on December 6, 2006. On January 16, 2007, the Examiner mailed a Notice of Noncompliant Appeal Brief stating: "Summary of claimed subject matter must identify and map all independent claims on appeal (1, 3, 12 & 18) to the specification by page and line number or paragraph number and/or drawings, if any." In response to the Notice of Noncompliant Appeal Brief, Appellant provides the attached Replacement Summary of Claimed Subject Matter.

Conclusion

Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the Examiner's final rejection of the pending claims and instruct the Examiner to issue a notice of allowance of all pending claims.

The Commissioner is hereby authorized to charge any fee and credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,
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Replacement Summary of Claimed Subject Matter

FIGURE 1 of Appellant's specification is a block diagram of a design system 10 that includes a user interface 12, a digital model data set 14, a smart model attribute data set 16, a business process attribute data set 18, and a knowledge base data set engine 20. User interface 12 interacts with digital model data set 14. Digital model set 14 comprises information defining a physical structure of components of an assembly, as an example, in a computer aided design environment. Digital model data set 14 may comprise data that specifies the size and orientation of various components within a more complex mechanical assembly. Digital model data set 14 receives and is linked to additional information from smart model attribute data set 16. Smart model attribute data set 16 also interacts with user interface 12. Smart model attribute data set 16 provides additional information that is linked to various features specified within digital model data set 14. For example, digital model data set 14 may comprise the dimensions and orientations of a particular bracket within a complex mechanical assembly. In this example, smart model attribute data set 16 may comprise information associated with the type of material used to construct the bracket as well as tolerance information associated with the dimensions of the bracket and process information, such as, for example, heat treatments, finishes, specific coatings, lubricants or other processing used to construct the bracket. *Page 5, lines 1 - 21.*

Business process attribute data set 18 further augments the digital model data set 14. Business process attribute data set 18 comprises attributes that are related to business processes associated with the components within the assembly. For example, a business process attribute stored within business process attribute data set 18 may comprise an information address field, a safety information field, a quality information field, or a revision information field. *Page 5, line 22 - Page 6, line 9.*

Business process attribute data set 18 and the smart model attribute data set 16 are enhanced by being automatically inferentially populated through the operation of knowledge base data set engine 20. Knowledge base data set engine 20 receives information from uniform resource locators 22, local data bases 24, and external data bases that supply information to either the smart model attribute data set 16 or the business process attribute data set 18 during the design of the digital model data set 14. For example, if a designer specifies that a particular bracket within an assembly is to be constructed using a particular type of steel, knowledge base data set engine 20 could automatically inferentially create and

link a smart model attribute defining a particular heat treatment process that is required or suggested with that type of steel and could also inferentially create and link a business process attribute that any use of the required or suggested process indicates that the component is critical to quality and is a major safety concern. In this manner, a designer who may or may not know of the various structural and mechanical options available to him and the associated business processes can benefit from the information managed by the knowledge base data set engine 20 which will inferentially link structures designed in the digital model data set 14 during the design process to applicable smart model and business process attributes. *Page 6, lines 12 - 29.*

FIGURE 2 shows examples of business process attributes such as a quality information display indicator 38 and a revision display indicator 40 associated with surface 32 that may be stored in business process attribute data set 18 of FIGURE 1. Quality information may comprise various levels of information such as, for example, information specifying that a particular process, feature, or element may be critical to quality, a key characteristic or of no concern to quality. These could be represented by quality display instances of "CTQ" for critical to quality, "KC" for key characteristic or be left blank if the feature or process is not a quality concern. Similarly, the revision information associated with revision display indicator 40 may communicate a revision number or other identifier to a user of the system 10. In this manner, a user can be made to understand that a particular process or feature within the digital model data set 14 was changed during a particular revision. In the example shown in FIGURE 2, the revision display indicator 40 specifies that surface 32 or its associated processes were changed in Revision 2. *Page 8, lines 7 - 19.*

FIGURE 2 also shows a safety indicator indicated generally at 36. Surface 32 and, specifically, the process defining the application of lubricant to surface 32 has been identified in the example shown in FIGURE 2 as being a critical safety concern. A safety business process attribute may have various values such as, for example, the attribute may be a "critical", "major", or "minor" concern to safety. The display element 36 shown in FIGURE 2 illustrates one potential method of communicating this safety information to a user of the system. For example, a critical safety concern might result in a display of a safety level 1 in a triangle, a major safety concern could result in the result of a safety level 2 in a triangle and a minor safety concern could result in the display of a safety level 3 in a triangle. *Page 7, line 29 - Page 8, line 6.*

For the convenience of the Board, Appellant provides the following mapping of the four independent claims here on appeal. Appellant does not necessarily identify all portions of the Specification and drawings relevant to the recited elements of the claims. Appellant provides the following mapping not to limit the scope of the claims, but to help the Board make a decision on this Appeal.

Independent Claim 1 recites the following:

A data processing system (e.g., Figure 1; Page 5, Line 2, through Page 7, Line 2), comprising:

- a user interface operable to display information to a user and to receive commands from a user accessing a digital model data set (e.g., element 12 in Figure 1; Page 5, Lines 3-4; Page 7, Lines 15-20);

- a digital model data set comprising data associated with the form of mechanical structures (e.g., element 14 in Figure 1; Page 5, Lines 4-14; Page 6, Lines 3-11); and

- a business process attribute data set linked to the digital model data set such that various elements within the digital model data set are linked to business process attributes within the business process attribute data set (e.g., element 18 in Figure 1; Page 5, Lines 22-29) such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user (e.g., Page 5, Line 30, through Page 6, Line 11); and

- wherein the business process attribute comprises one of:

- quality information defining a quality level parameter associated with a component represented in the digital model data set (e.g., element 38 in Figure 2; Page 6, Lines 6-11; Page 8, Lines 7-13);

- safety information defining a safety level parameter associated with a component represented in the digital model data set (e.g., element 36 in Figure 2; Page 6, Lines 6-11; Page 7, Line 29, through Page 8, Line 6);

- revision information defining a revision parameter associated with a component represented in the digital model data set (e.g., element 40 in Figure 2; Page 6, Lines 6-11; Page 8, Lines 14-19); and

- an information address attribute comprising a network address associated with information related to a component associated with data within the digital model data set (e.g., Figure 2; Page 6, Lines 3-6; Page 7, Lines 11-28).

Independent Claim 3 recites the following:

A data processing system (e.g., Figure 1; Page 5, Line 2, through Page 7, Line 2), comprising:

- a user interface operable to display information to a user and to receive commands from a user accessing a digital model data set (e.g., element 12 in Figure 1; Page 5, Lines 3-4; Page 7, Lines 15-20);

- a digital model data set comprising data associated with the form of mechanical structures (e.g., element 14 in Figure 1; Page 5, Lines 4-14; Page 6, Lines 3-11);

- a business process attribute data set linked to the digital model data set such that various elements within the digital model data set are linked to business process attributes within the business process attribute data set (e.g., element 18 in Figure 1; Page 5, Lines 22-29) such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user (e.g., Page 5, Line 30, through Page 6, Line 11); and

- wherein the business process attribute comprises safety information defining a safety level parameter associated with a component represented in the digital model data set (e.g., element 36 in Figure 2; Page 7, Line 29, through Page 8, Line 6).

Independent Claim 12 recites the following:

A method of operating a digital design system (e.g., Figure 3; Page 9, Line 22, through Page 10, Line 27) comprising:

- defining digital model data set information specifying the structure of components within an assembly (e.g., Figure 3; Page 9, Lines 24-30);

- defining business process attributes linked to particular features specified within the digital model data set (e.g., Figure 3; Page 9, Lines 30-32);

- displaying instances of features within the digital model data set which are associated with such business process attributes (e.g., Figure 2; Figure 3; Page 7, Lines 11-28);

- displaying business process attribute display instances associated with business process attributes linked to the displayed features within the digital model data set (e.g., Figure 2; Figure 3; Page 7, Line 29, through Page 8, Line 19); and

- further comprising automatically inferentially applying business process attributes to features within the digital model data set through the operation of an automated knowledge base data set engine operable to store associations between potential features which may be used in digital model data sets and inferred business process attributes associated with such features (e.g., element 20 in Figure 1; Figure 3; Page 9, Line 32, through Page 10, Line 14).

Independent Claim 18 recites the following:

A data processing system (e.g., Figure 1; Page 5, Line 2, through Page 7, Line 2), comprising:

- a user interface operable to display information to a user and to receive commands from a user accessing a digital model data set (e.g., element 12 in Figure 1; Page 5, Lines 3-4; Page 7, Lines 15-20);

- a digital model data set comprising data associated with the form of mechanical structures (e.g., element 14 in Figure 1; Page 5, Lines 4-14; Page 6, Lines 3-11);

- a business process attribute data set linked to the digital model data set such that various elements within the digital model data set are linked to business process attributes within the business process attribute data set (e.g., element 18 in Figure 1; Page 5, Lines 22-29) such that users of the data processing system are displayed business process attribute display elements when a display element associated with a mechanical component defined by the digital model data set is displayed to the user (e.g., Page 5, Line 30, through Page 6, Line 11); and

- a knowledge base data set engine (e.g., element 20 in Figure 1; Page 6, Lines 11-19) coupled to and operable to access various knowledge base data sets (e.g., elements 22, 24, 26, and 28 in Figure 1; Page 6, Lines 11-19), the knowledge base data set engine operable to inferentially apply business process attributes to features within the digital model data set responsive to information linked to such features within the knowledge base data sets accessible to the knowledge base data set engine (e.g., Page 6, Line 19, through Page 7, Line 2).